

MPE TEST REPORT

Report No.: SHE23010013-02BE

Date: 2023-03-01

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Applicant : SIMCom Wireless Solutions Limited
Address of Applicant : SIMCom Headquarters Building, Building 3, No.289
Linhong Road, Changning District, Shanghai,China

Product Name : LTE wireless module
Brand Name : SIMCom
Model No. : A7605SA-H
Sample acquisition Method : Sent by Client

Sample No. : E23010013-01#05

FCC ID : 2AJYU-8BC0001

Standard : FCC Part 2.1091

Date of Receipt : 2023-01-05
Date of Test : 2023-01-06 ~ 2023-03-01
Date of Issue : 2023-03-01

Remark:

This report details the results of the testing carried out on one sample, the results contained in this report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

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1 General Information

1.1 Testing Laboratory

Company Name	ICAS Testing Technology Service (Shanghai) Co., Ltd.
Address	No.1298, Pingan Road, Minhang District, Shanghai, China
Telephone	0086 21-51682999
Fax	0086 21-54711112
Homepage	www.icasiso.com

1.2 Environmental conditions

Temperature (°C)	18-25
Humidity (%RH)	40-65
Barometric Pressure (mbar)	960-1060
Ambient noise & Reflection (W/kg)	< 0.012

1.3 Details of Application

Applicant Company Name	SIMCom Wireless Solutions Limited
Address	SIMCom Headquarters Building, Building 3, No.289 Linhong Road, Changning District, Shanghai,China
Contact Person	Yongsheng Li
Telephone	+86 21 3252 3134
Email	yongsheng.li@simcom.com
Manufacturer Company Name	SIMCom Wireless Solutions Limited
Address	SIMCom Headquarters Building, Building 3, No.289 Linhong Road, Changning District, Shanghai,China
Factory Company Name	SIMCom Wireless Solutions Limited
Address	SIMCom Headquarters Building, Building 3, No.289 Linhong Road, Changning District, Shanghai,China

1.4 Details of EUT

Product Name	LTE wireless module		
Brand Name	SIMCom		
Test Model No.	A7605SA-H		
FCC ID	2AJYU-8BC0001		
Mode of Operation	GSM/GPRS/EDGE 850/1900 WCDMA/HSDPA/HSUPA Band II/V LTE FDD Band 2/4/5/7/66 LTE TDD Band 38/41		
Frequency Range	Band	Tx (MHz)	Rx (MHz)
	GSM 850	824 ~ 849	869 ~ 894

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	GSM 1900	1850 ~ 1910	1930 ~ 1990
	WCDMA Band II	1850 ~ 1910	1930 ~ 1990
	WCDMA Band V	824 ~ 849	869 ~ 894
	LTE FDD Band 2	1850 ~ 1910	1930 ~ 1990
	LTE FDD Band 4	1710 ~ 1755	2110 ~ 2155
	LTE FDD Band 5	824 ~ 849	869 ~ 894
	LTE FDD Band 7	2500 ~ 2570	2620 ~ 2690
	LTE TDD Band 38	2570 ~ 2620	2570 ~ 2620
	LTE TDD Band 41	2496 ~ 2690	2496 ~ 2690
	LTE FDD Band 66	1710 ~ 1780	2110 ~ 2180
Modulation Type	GSM/GPRS	GMSK	
	EGPRS	8PSK	
	WCDMA	QPSK	
	HSDPA/HSUPA	QPSK	
		16QAM	
	LTE	QPSK	
16QAM			
Antenna Type	External Antenna		
Antenna Gain	GSM/GPRS/EDGE 850: 2.02 dBi GSM/GPRS/EDGE 1900: 2.12 dBi WCDMA/HSDPA/HSUPA Band II: 2.12 dBi WCDMA/HSDPA/HSUPA Band V: 2.02 dBi LTE FDD Band 2: 2.12 dBi LTE FDD Band 4: 3.12 dBi LTE FDD Band 5: 2.02 dBi LTE FDD Band 7: 3.20 dBi LTE TDD Band 38: 1.64 dBi LTE TDD Band 41: 3.20 dBi LTE FDD Band 66: 3.12 dBi		
Extreme Temperature Range	-30°C ~ +80°C		
Hardware version	V1.02		
Software version	A7605M7_V5.0		

2 Maximum Permissible Exposure (MPE)

2.1 Limits

According to FCC Part 1.1307, systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the commission's guidelines.

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TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposure				
0.3-3.0	614	1.63	*100	6
3.0-30	1842/f	4.89/f	*900/f ²	6
30-300	61.4	0.163	1.0	6
300-1,500			f/300	6
1,500-100,000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*100	30
1.34-30	824/f	2.19/f	*180/f ²	30
30-300	27.5	0.073	0.2	30
300-1,500			f/1500	30
1,500-100,000			1.0	30

f = frequency in MHz * = Plane-wave equivalent power density

2.2 Assessment methods

Calculation Formula from FCC OET 65:

$$S = \frac{P * G}{4 * \pi * R^2}$$

Where:

S = Power Density (mW/cm²)

P = Input Power of the Antenna (mW)

G = Antenna Gain Relative to an Isotropic Antenna

R = Distance from the Antenna to the Point of Investigation (cm)

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2.3 Test Result

Operation Mode	Frequency Range (MHz)	Max Conducted Power (dBm)	Antenna Gain (dBi)	Max EIRP (mW)	Power Density at R = 20 cm (mW/cm ²)	Limit (mW/cm ²)
GSM 850	824 ~ 849	32.30	2.02	2703.96	0.5379	0.55
GSM 1900	1850 ~ 1910	30.00	2.12	1629.30	0.3241	1.0
WCDMA Band II	1850 ~ 1910	23.00	2.12	325.09	0.0647	1.0
WCDMA Band V	824 ~ 849	23.00	2.02	317.69	0.0632	0.55
LTE FDD Band 2	1850 ~ 1910	23.00	2.12	325.09	0.0647	1.0
LTE FDD Band 4	1710 ~ 1755	23.50	3.12	459.20	0.0913	1.0
LTE FDD Band 5	824 ~ 849	23.50	2.02	356.45	0.0709	0.55
LTE FDD Band 7	2500 ~ 2570	22.50	3.20	371.54	0.0739	1.0
LTE TDD Band 38	2570 ~ 2620	23.00	1.64	291.07	0.0579	1.0
LTE TDD Band 41	2496 ~ 2690	22.50	3.20	371.54	0.0739	1.0
LTE FDD Band 66	1710 ~ 1780	23.50	3.12	459.20	0.0913	1.0

Note(s):

1. For 300 – 1,500MHz: Power Density limit is $f/1500$ mW/cm²
2. For 1,500 – 100,000MHz: Power Density limit is 1.0 mW/cm²

2.4 Conclusion

The Power Density at the position which is 20 cm far from the EUT is smaller than the General Population/Uncontrolled Exposure limit.

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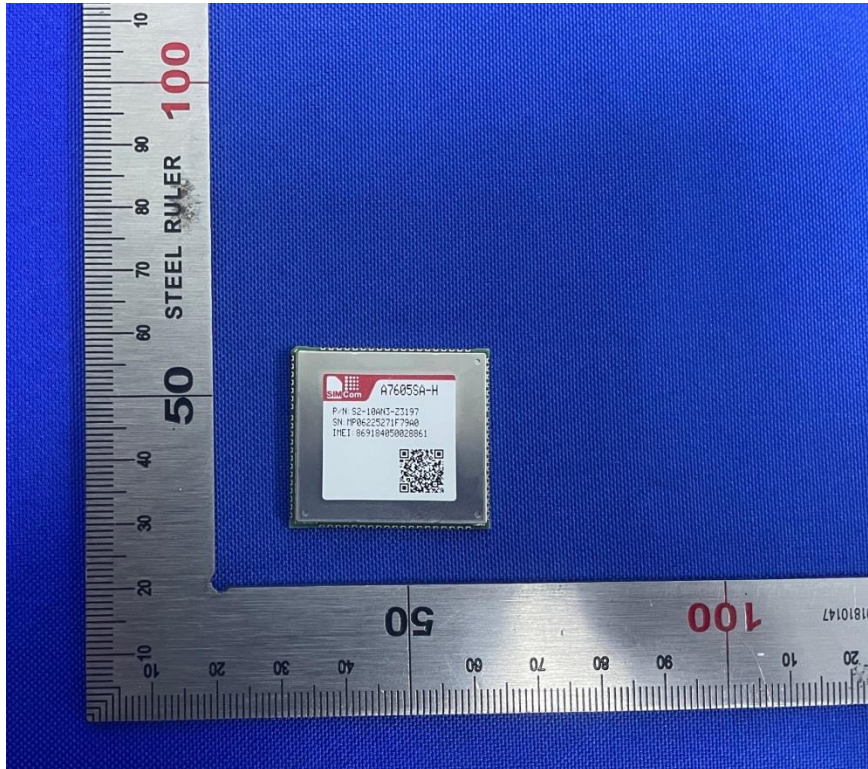
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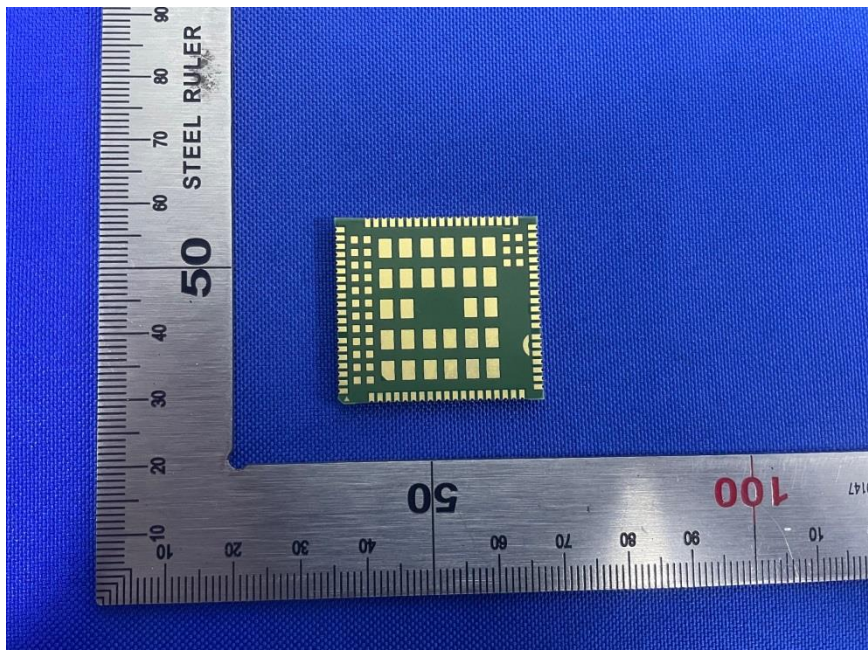
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3 Appendixes

3.1 Sample Photograph



Front of the sample



Rear of the sample

End of the report